

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 128 197 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
29.08.2001 Bulletin 2001/35

(51) Int Cl.7: G02B 6/293, H04J 14/02,
G02B 6/34

(21) Application number: 00311175.4

(22) Date of filing: 14.12.2000

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR
Designated Extension States:
AL LT LV MK RO SI

• Stewart, William James
Blakesley, Northants NN12 8RF (GB)
• Hibberson, Ruth
Northampton NN1 4PG (GB)

(30) Priority: 22.02.2000 GB 0003973

(74) Representative: Hoste, Colin Francis
Marconi Intellectual Property
Marrable House
The Vineyards
Gt. Baddow
Chelmsford Essex CM2 7QS (GB)

(71) Applicant: MARCONI COMMUNICATIONS
LIMITED
Coventry, CV3 1HJ (GB)

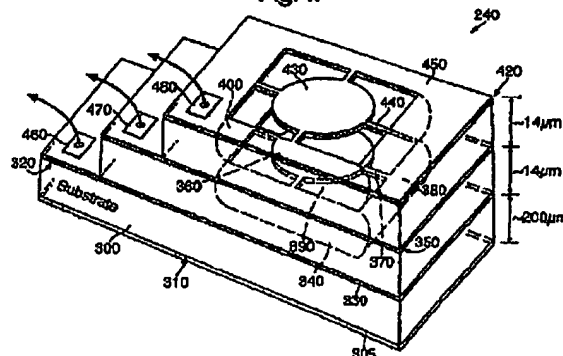
(72) Inventors:
• Cush, Rosemary
Northampton, NN1 5LY (GB)

(54) Wavelength selective optical filter

(57) The present invention provides a wavelength selective optical filter device (240) for receiving input radiation and outputting corresponding filtered output radiation. The filter device (240) includes a plurality of at least partially mutually coupled Fabry-Perot optical resonators (330,340,360;360,400,430) for filtering the input radiation to generate the output radiation, the resonators having tuning ranges which at least partially mutually overlap, the filter device (240) being tunable from a first radiation wavelength to a second radiation wavelength by mutually detuning the resonators in a period

where the resonators are being retuned from the first wavelength (λ_1) to the second wavelength (λ_2) so that the filter device (240) is substantially in a non-responsive state during the period. The resonators incorporate freely suspended mirrors (360, 430) which are electrostatically actuated to affect tuning of the resonators (330,340,360;360,400,430). The filter device (240) is thereby capable of tuning between different wavelengths without tuning through wavelengths therebetween. The filter device (240) can be included into an add-drop filter (10) in a multichannel WDM communication system (100).

Fig.4.



EP 1 128 197 A2